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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,570	09/30/2003	Yosuke Hamada	16869G-086900US	7907

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EXAMINER

HABERMEHL, JAMES LEE

ART UNIT PAPER NUMBER

2651

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,570

Applicant(s)

HAMADA ET AL.

Examiner

James L Habermehl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-8,10 and 11 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 30 Sep 03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, and 2-4 as dependent thereon, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The invention disclosed in the specification and drawings does not show the output from the voltage feedback amplifier providing an input to the head-moving mechanism as claimed in line 22. It appears the use of "voltage" in line 22 is a typographical error and amending it to read --current-- would obviate this rejection. Claims 2-4 are rejected as being dependent upon claim 1.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

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invention. Claim 8 recites the limitation "said product of multiplication" and "said gain" in lines 2 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ryan. Ryan Figures 1 and 3 meet all the limitations of the claim, including disk (4), head (6), head support (8), VCM (14), head position measuring circuit (col. 1, lines 32-34), a controller (col. 1, lines 34-36), a drive circuit (2), a current feedback amplifier (80) and a voltage feedback amplifier (82) capable of being used selectively (44A/44B), a controller speed limiter (60, because the D/A has an upper and lower quantizing limit), voltage feedback amplifier is used when said head position signal is unstable (col. 4, lines 44-48 and 50-53, where servo data synchronization is lost), and the current feedback amplifier is used when the signal is normal (col. 4, lines 40-42).

Regarding claim 10, the disk of Ryan is a magnetic disk, as "disk drive" and "ramp loading/unloading" are terms of art in the magnetic disk drive art.

Regarding claim 11, writing to the disk is inherent for operation of a disk drive.

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8. Claim 1, and claims 2-4 dependent thereon, would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action. Claims 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 1 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a disk storage device comprising causing said drive signal to be input into said voltage feedback amplifier and causing an output from said voltage feedback amplifier to provide said input signal to said head-moving mechanism when a malfunction condition is detected, and causing said drive signal to be input into said current feedback amplifier and causing an output from said current feedback amplifier to provide said input signal to said head-moving mechanism when a malfunction condition is detected, as presented in the environment of claim 1. It is noted that the closest prior art, Ryan, shows voltage calibration for velocity control of the VCM that selects between voltage feedback and current feedback when a malfunction condition is detected similar to the claimed invention. However, Ryan fails to disclose causing said drive signal to be input into said voltage feedback amplifier and causing an output from said voltage feedback amplifier to provide said input signal to said head-moving mechanism, and causing said drive signal to be input into said current feedback amplifier and causing an output from said current feedback amplifier to provide said input signal to said head-moving mechanism as claimed.

Claim 6 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a disk storage device comprising wherein said unstable head-position signal is obtained immediately after said disk storage device is connected to a power supply, as presented in the environment of claim 6. It is noted that the closest prior art, Ryan, shows voltage calibration for velocity control of the VCM that selects between voltage feedback and current feedback when a malfunction condition is detected similar to the claimed invention. However, Ryan fails to disclose wherein said unstable head-position signal is obtained immediately after said disk storage device is connected to a power supply as claimed.

Claim 8 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a disk storage device comprising wherein said speed limiter is saturated with a value obtained by dividing a product of a predetermined maximum speed and a counter electromotive voltage constant of the VCM by a gain of said voltage feedback amplifier, as presented in the environment of claim 8. It is noted that the closest prior art, Ryan, shows voltage calibration for velocity control of the VCM that selects between voltage feedback and current feedback when a malfunction condition is detected similar to the claimed invention. However, Ryan fails to disclose wherein said speed limiter is saturated with a value obtained by dividing a product of a predetermined maximum speed and a counter electromotive voltage constant of the VCM by a gain of said voltage feedback amplifier as claimed.

Claim 9 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a disk storage device comprising a

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speed determining unit that provides a speed signal indicating said speed of said head by differentiating said head-position signal provided by said head-positioning measuring circuit, a desired speed determining unit that generates a desired speed signal on said basis of said head-position signal provided by said head-positioning measuring circuit and said desired track-positioning signal, and a subtractor that generates a speed deviation signal by subtracting said output signal of said desired speed determining unit from said. output signal of said speed determining unit, as presented in the environment of claim 9. It is noted that the closest prior art, Ryan, shows voltage calibration for velocity control of the VCM that selects between voltage feedback and current feedback when a malfunction condition is detected similar to the claimed invention. However, Ryan fails to disclose speed determining unit that provides a speed signal indicating said speed of said head by differentiating said head-position signal provided by said head-positioning measuring circuit, a desired speed determining unit that generates a desired speed signal on said basis of said head-position signal provided by said head-positioning measuring circuit and said desired track-positioning signal, and a subtractor that generates a speed deviation signal by subtracting said output signal of said desired speed determining unit from said. output signal of said speed determining unit as claimed.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Galbiati et al. Figure 2 and Rote et al. Figures 1 and 4 shows switching a voltage feedback signal, Pedrazzini Figure 3 shows switching a current feedback signals, Kuroiwa et al. Figure 4 and 6 and Saito et al. Figure 1 shows switching between PWM and linear drivers, and Hunter Figure 7 and 9, Hirano et al. Figures 8 and 15, show voltage and current feedback.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L Habermehl whose telephone number is (703)305-6975. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Habermehl/jlh
12 Mar 05



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